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Application Summary

Competition Details

Competition Title:	Spring 2024 CURO Research Award
Category:	
Cycle:	

Application Information

Submitted By:	Gioia Zincone
Application ID:	2828
Application Title:	Gioia Zincone Spring 2024 Application

Personal Details

First Name:	Gioia
Last Name:	Zincone
Application title:	Gioia Zincone Spring 2024 Application
UGA Student ID (81x):	811366584
Preferred Name:	
UGA MyID email address:	gaz02259@uga.edu
Year in school as of Fall 2023:	2nd year
Expected graduation date:	May 2026
Major(s):	Astrophysics, Philosophy
Major(s) College(s):	Franklin College of Arts and Sciences
Current cumulative GPA:	4.0
Are you currently a member of the Morehead Honors College?:	No
Have you presented research at the CURO Symposium? :	No

If yes, please list each year you presented

Have you previously received a CURO Research Award or CURO Research Award?:	No

If yes, please list each semester and year you received an award

Are you currently enrolled in or have you previously completed a CURO Research or Thesis course?:	No

If yes, please list courses. Include prefix, course number, and semester taken

To help us determine financial need, please explain how you are paying for tuition, and please list any financial aid or scholarships you are currently receiving, including student loans::	I have received the Zell Miller scholarship every semester that I have been enrolled at UGA. I paid for additional costs and fees out of pocket this semester, but took out the maximum amount of student loans both semesters of last year.
Faculty Mentor Last Name:	Weliweriya
Faculty Mentor First Name:	Nandana
Faculty Mentor's UGA email address:	nandanaw@uga.edu
Faculty Mentor's Department:	Physics & Astronomy
Faculty Mentor's College:	Franklin College of Arts and Sciences

Research Title

Exploring Virtual Reality in STEM Education: Enhancing Student Understanding through Immersive Learning Environments

When and how frequently will you meet with your mentor?

For in person meetings: approximately 1 hour, every 2-3 weeks. However, we will exchange email updates and communications on a weekly basis.

Does your research involve human subjects:	No
Type your full name below to indicate you are aware of the CITI and IRB requirements:	
Does your research involve domestic or international travel?:	No travel

This interdisciplinary research project intends to utilize three-dimensional simulations and virtual reality technology as a form of supplementary educational material for the purpose of enhancing students' understanding of astrophysical topics. This project is within the scope of physics education research and is led by Dr. Nandana Weliweriya and Dr. Inseok Song. I began working on this project in September of this year, and I will proceed with my involvement during the Spring 2024 semester during which I intend to continue my work on the topic of seasonal constellations. I am currently creating a storyboard that depicts the relevant concepts that are necessary for students' comprehension of the topic while providing a baseline that can be used for simulational development. The next stage of development will be to determine which software development tools and engines will be best suited to creating the necessary simulations. This will require working closely with other research assistants who are more well versed in this subject matter. The collaboration will allow me to acquire my own knowledge of coding and its applications for three-dimensional simulation building, and I can utilize this knowledge to craft the simulations for this topic. The future completion of the aforementioned storyboard could be used as a guide for others who are tasked with creating a similar model for different topics. This can be accomplished with a detailed log book documenting my thought process, the information I deemed necessary for understanding the concept, and how I condensed this information into the outline of a simulation that thoroughly, accurately, and concisely expresses the concept. Within this documentation, it will also be important to include how discussion with the faculty research leads, as well as other research assistants, has led to constructive feedback which is essential to a refined final project. In this sense, my involvement in this project will accomplish two complementary methods of enriched education: the completion of the main task involving building a virtual reality model of seasonal constellations and a thorough guide to completing the same task for similar projects in the future. Although improvements upon my methodology will surely be implemented as more research assistants become involved and different branches of this research are pursued, my work can serve as a precedent for the completion of this project.

My short-term academic goals involve maintaining academic excellence along with learning and improving a variety of skill sets. Striving for excellence within an academic or professional environment has always been one of my top priorities in life, and I take pride in the effort I put into upholding my personal standards. I can owe many of my successes to the continued fulfillment of this particular goal. I also want to use this time as an undergraduate to acquire skills that I know I will be able to apply in my future educational and professional opportunities. These two goals are jointly addressed by my participation in this research project, as the valuable skills I learn while working on the project will result in becoming both a better student and independent worker within a collaborative environment. This opportunity will help me further develop important skills such as familiarity with programming languages and maintaining a balance between school, work, and other responsibilities, as well as allow me gain experience participating in a long-term project that I helped bring to fruition. In a more long-term sense, my goals include attending graduate school and culminating my educational accomplishments with a fulfilling job in a field that I am passionate about. My participation in this project will aid in my pursuit of these goals as it will provide insight into which topics within the fields of astronomy and physics I am most interested in, which is essential knowledge when determining my intentions for graduate school. Involvement with this project will also provide me with mentors who are familiar with the physics and astronomy fields as well as my own strengths and interests. These mentors can serve as helpful resources and guides so that I can choose the path that will allow me to follow my passions and turn them into a successful career.

Review Form

Spring 2024 CURO Research Award

Routing Step:	Faculty mentor UGA email address
Application Title:	Gioia Zincone Spring 2024 Application
Application ID:	2828
Review Deadline:	11/10/2023 11:59 PM

***Your Comments:**

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***Please indicate whether you approve or do not approve this application moving forward in the competition.:**

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